REMARKS

Status of Claims

[1] As of the Non-Final Action of 31 May 06, claims 1-23 were pending. All claims were rejected by the Action.

[2] Independent claims 1 and 11 have been amended to recite that the distance between the first electrode termination and the second electrode termination is equal to the sum of the radii of the apertures of the circuit conductors plus an additional increment selected to maintain a minimum amount of dielectric between the apertures of the circuit conductors. Support for this amendment is found in the specification at least at page 12: 22 to page 13:2. Thus, no new matter has been added.

Rejections

35 U.S.C. 102(b)

Vu

[3] Claims 1, 2, 4-12 and 14-23 were rejected under this provision as being anticipated by U.S. 5,144,525 to Vu et al. ["Vu"]. The Office Action states that Vu Figures 1 and 2 disclose all claimed elements. Applicants disagree.

[4] Vu does not expressly or pictorially disclose the following recited elements: a printed wiring board or an electrode formed from a foil. Nor would a skilled artisan reasonably expect that Vu inherently discloses these because Vu concerns a low-temperature co-fired ceramic ["LTCC"] structure containing buried capacitors.

[5] LTCC structures as Vu col. 1:24-28 discloses includes stacks of LTCC tape oriented around various electronic components. The stacks are then laminated by low temperature firing. Since this is LTCC technology, one of skill in the art would readily understand that the Vu electrodes cannot be formed from foil, but from electroless plating of silver, gold, nickel or palladium, etc. The specification at page 6: 30 to page 7: 10 clarifies that forming from foil means printing a thick film metallic paste (preferably of copper). Nothing in Vu discloses or hints at this element.

[6] Also, since Vu concerns LTCC technology, a skilled artisan would understand that LTCC applications do not include printed wiring boards but include automotive, wireless (telephony) and radio frequency applications. Thus, Vu neither expressly nor inherently discloses to a skilled artisan a printed wiring board or an electrode formed from foil.

[7] Besides these *prima facie* deficiencies in Vu, the claims as amended herein recite other elements not disclosed in Vu, namely that the distance between the first electrode termination and the second electrode termination is equal to the sum of the radii of the apertures of the circuit conductors plus an additional increment selected to maintain a minimum amount of dielectric between the apertures of the circuit conductors such that a suitable margin of error for registration inherent in screen printing is provided. The specification at page 2: 2-18 discusses that conventional capacitor elements are generally located at the opposite edges of the capacitor, which results in a disadvantageous use of space in the printed wiring board ["PWB"] and more importantly, in a high circuit inductance, an undesirable property in high-frequency and high-speed applications. The specification at page 13: 3-5 clarifies that reducing circuit inductance can be accomplished by spacing the electrode terminations relatively close to one another.

[8] The specification at page 12: 22 to page 13: 2 and at Figure 1 J identifies several approaches for spacing the terminations of the first and of the second electrodes so as to reduce circuit inductance. These approaches include spacing terminations (1) at a distance less than half of the width of the first electrode or of the second electrode or (2) at a distance equal to the sum of the radii of the apertures of the first and second circuit conductors plus an additional increment.

[9] The latter approach to spacing the terminations has been recited in the claims as this approach allows for an absolute minimum spacing between the terminations. The claims now recite a distance equal to the radii of the apertures of the first and of the second circuit conductors--which places the apertures directly next to each other—plus an additional increment of space. This additional increment maintains a minimum amount of dielectric between the apertures while allowing a suitable margin of error for registration mistakes inherent in screen printing. Thus, the claims recite a physically minimum distance between the terminations of the first and the second electrodes. The invention as recited provides a method to reduce the contribution to circuit inductance in a PWB as well as provides such a PWB by claiming a structural feature not disclosed in Vu.

[10] To be clear, the use of the term radius in the specification and the claims does not necessarily dictate that the apertures are circles. The specification at page 21: 7 states that the apertures may take other shapes, such as polygons. In addition, the term radius has a broader meaning in geometry and engineering contexts than indicative of a circle. The radius of a regular polygon is that line segment that joins the center of the polygon with any of its vertices. Moreover, in an engineering context, the radius of a part having geometry such as a cylinder, an irregular polygon, a graph or a mechanical part is the distance from its center or

axis of symmetry to its outermost points. In such a case, the radius may be more than half the diameter. Thus, the claims accommodate apertures having geometries other than circular.

[11] Since Vu does not disclose the above named elements, Applicants respectfully request the withdrawal of this rejection.

Nakao

[12] The Office Action rejected claims 1-3 and 11-13 under this provision as being anticipated by U.S. 5,926,377 to Nakao et al. ["Nakao"]. Nakao Fig. 18 was asserted to disclose all elements of these claims. Nakao teaches a multilayer printed wiring board intended to be capable of reducing radio waves emitted therefrom. The technical novelty for achieving this is the organization of capacitor embedment within the PWB. Specifically, capacitors are formed at the edges of an overlapping pattern of a power source layer and a ground layer so that a high frequency current passing through the power source layer is also passed through the ground layer, thereby reducing radio waves emitted from the PWB.

[13] Nakao does not expressly disclose the claimed invention as recited, in particular the amended element: the distance between the first electrode termination and the second electrode termination is equal to the sum of the radii of the apertures of the circuit conductors plus an additional increment selected to maintain a minimum amount of dielectric between the apertures of the circuit conductors such that a suitable margin of error for registration inherent in screen printing is provided. Also, Nakao does not inherently disclose the claimed element as it contains no discussion of spacing of the electrode terminations. As stated above, Nakao concerns the spacing pattern of the capacitors within the PWB, not the electrode terminations.

[14] Since Nakao does not disclose all the claimed elements, Applicants respectfully request the withdrawal of this rejection.

[15] In view of the foregoing, allowance of this application is respectfully requested.

Respectfully submitted,

/Loretta F. Smith/

LORETTA F. SMITH
ATTORNEY FOR APPLICANTS
Kelly Law Registry for DuPont Legal
Registration No.: 45,116
Telephone: 302-992-2151
Facsimile: 302-992-5374

Dated: 31 August 2006